


Part 3 Handout



Applications of DemProj

Slides	Slide Content	Slide Captions
 <p>USAID HEALTH POLICY INITIATIVE</p> <p>Part 3: Applications of DemProj</p>	<p>Part 3: Applications of DemProj</p>	<p>Welcome to the third module of the Health Policy Initiative E-learning course. My name is Karen Foreit, and I will be your instructor. In the third part of this course, you will practice using DemProj outputs to help program managers and advocates plan future activities. Although the following exercises are hypothetical, they represent real-life program questions that one could expect to address using the DemProj Model. You may do these exercises on your own or follow along with me.</p>
<p>Objectives</p> <ul style="list-style-type: none"> ▪ By the end of this unit, participants will have demonstrated their understanding of DemProj through programmatic applications. 	<p>Objectives</p> <ul style="list-style-type: none"> ▪ By the end of this unit, participants will have demonstrated their understanding of DemProj through programmatic applications. 	<p>By the end of this unit, you will have strengthened your understanding of DemProj. You will also learn how to electronically transfer or export DemProj results to another format; in this case, an excel spreadsheet, for further analysis. To do the exercises on your own, press the “No Demo” button. To follow along with me, press the “Demo” button.</p>

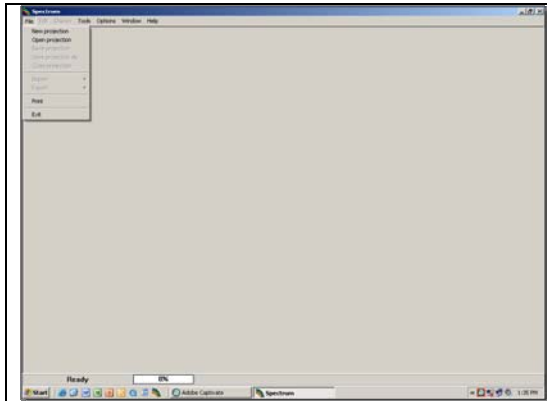
<p>Introduction to Exercises</p> <ul style="list-style-type: none"> ▪ The exercises will use Spectrum and MS-Excel®. Be sure you have both programs installed on your computer. ▪ You will be exporting outputs from Spectrum to Excel to answer the questions. 	<p>Introduction to Exercises</p> <ul style="list-style-type: none"> ▪ The exercises will use Spectrum and MS-Excel®. Be sure you have both programs installed on your computer. ▪ You will be exporting outputs from Spectrum to Excel to answer the questions. 	<p>We are going to create a country population projection in Spectrum. Then we will export some of the DemProj outputs to Excel to answer specific health-related questions that we will see in a minute. To do the exercise, you will want to open both Spectrum and Excel. I'll show you how a little bit later. Now let's get started with the exercise.</p>
<p>Exercise 1: Ministry of Health, Benin</p> <p>The government has set goals for family planning and childhood immunization. To plan to meet these goals, the Ministry of Health needs to know how many people will need services, and this will depend on population growth.</p>	<p>Exercise 1: Ministry of Health, Benin</p> <p>The government has set goals for family planning and childhood immunization. To plan to meet these goals, the Ministry of Health needs to know how many people will need services, and this will depend on population growth.</p>	<p>Our first exercise takes us to Benin. Family planning and childhood immunization are two priority health interventions. The government has set numeric goals for these programs. Therefore, to plan to meet these goals, the Ministry of Health needs to know how many people will need services, and this of course will depend on population growth. Before we plunge into the projection, let's take a closer look at the childhood immunization program. If we want to use the population projections to help program managers and policymakers make decisions, we first need to understand how their programs work and what they are trying to accomplish.</p>
<p>Exercise 1: Ministry of Health, Benin</p> <ul style="list-style-type: none"> ▪ WHO recommends that countries try to immunize all children against six vaccine preventable diseases in the first year of life. ▪ The immunization program must order, store, and deliver adequate supplies to meet the needs of the population. ▪ Our job is to use DemProj to help the Ministry plan how many doses of vaccine will be needed. 	<p>Exercise 1: Ministry of Health, Benin</p> <ul style="list-style-type: none"> ▪ WHO recommends that countries try to immunize all children against six vaccine preventable diseases in the first year of life. ▪ The immunization program must order, store, and deliver adequate supplies to meet the needs of the population. ▪ Our job is to use DemProj to help the Ministry plan how many doses of vaccine will be needed. 	<p>The World Health Organization (WHO) recommends that countries try to immunize all children against six vaccine preventable diseases in the first year of life. Some vaccines require a single dose and others must be given two or three times. The immunization program must order, store, and deliver adequate supplies to meet the needs of the population. If too little stock is ordered, some children will go unvaccinated. If too much stock is ordered, vaccines will be wasted. Our job is to use DemProj to help the ministry plan how many doses of vaccine will be needed. We will do this with the vaccine to prevent diphtheria, pertussis, and tetanus—commonly known as DPT.</p>

<p>Exercise 1: Ministry of Health, Benin</p> <hr/> <ul style="list-style-type: none"> ▪ WHO recommends three doses of DPT, starting at 6 weeks of age and spaced at least 4 weeks apart. ▪ Countries are encouraged to vaccinate at least 80% of all children. 	<p>Exercise 1: Ministry of Health, Benin</p> <ul style="list-style-type: none"> ▪ WHO recommends three doses of DPT, starting at 6 weeks of age and spaced at least 4 weeks apart. ▪ Countries are encouraged to vaccinate at least 80% of all children. 	<p>Vaccinating children against diseases that are passed from person to person protects not only the child who is vaccinated but also children who have not been vaccinated, as the vaccinated child who does not get the disease cannot spread it to others. Therefore, the WHO encourages countries to fully vaccinate at least 80% of all children, and new guidance is to try to reach even higher levels. How many doses of DPT will Benin need to do the job? To answer the question, let's break it down into pieces.</p>
<p>Exercise 1: Ministry of Health, Benin</p> <hr/> <ol style="list-style-type: none"> 1. How many children will be "eligible" for vaccination each year from 2015 to 2020? 2. How many doses of DPT will be needed to vaccinate 80% of these children three times? 	<p>Exercise 1: Ministry of Health, Benin</p> <ul style="list-style-type: none"> ▪ How many children will be "eligible" for vaccination each year from 2015 to 2020? ▪ How many doses of DPT will be needed to vaccinate 80% of these children three times? 	<p>First, what children are we talking about? The DPT guidelines target children in their first year of life, starting at 6 weeks of age. Where could we get these numbers? One of the DemProj outputs is births. We can use the number of births in a particular year to estimate the number of children who will need to be vaccinated in that year. While it's true that children born late in the year will finish their vaccinations in the following year, they will be pretty much offset by children who had been born late in the previous year and who are finishing their vaccinations this year. Because there is always a margin of error around any projection, the number of births should be adequate to help the ministry plan for vaccinations. Once we know how many eligible children there are, we can multiply that number by the targets of 80% coverage and 3 doses per vaccinated child. We will export the DemProj output of births to Excel to complete the calculation. Let's review the steps we will take.</p>

<p>Exercise 1: Ministry of Health, Benin</p> <hr/> <p>Steps in the exercise:</p> <ol style="list-style-type: none"> 1. Create a population projection from 2005 to 2020. 	<p>Exercise 1: Ministry of Health, Benin</p> <p>Steps in the exercise:</p> <ul style="list-style-type: none"> ▪ Create a population projection from 2005 to 2020. 	<p>First, we are going to create a population projection.</p>
<p>Exercise 1: Ministry of Health, Benin</p> <hr/> <p>Steps in the exercise:</p> <ol style="list-style-type: none"> 1. Create a population projection from 2005 to 2020. 2. Using the "Display" function in DemProj, find the expected number of births by year. 	<p>Exercise 1: Ministry of Health, Benin</p> <p>Steps in the exercise:</p> <ul style="list-style-type: none"> ▪ Using the "Display" function in DemProj, find the expected number of births by year. 	<p>Then we are going to find the expected number of births by year.</p>
<p>Exercise 1: Ministry of Health, Benin</p> <hr/> <p>Steps in the exercise:</p> <ol style="list-style-type: none"> 1. Create a population projection from 2005 to 2020. 2. Using the "Display" function in DemProj, find the expected number of births by year. 3. Export the number of births from DemProj to MS-Excel® and complete the calculation of number of doses of DPT needed. <ul style="list-style-type: none"> ▪ 80% coverage ▪ 3 doses 	<p>Exercise 1: Ministry of Health, Benin</p> <p>Steps in the exercise:</p> <ul style="list-style-type: none"> ▪ Export the number of births from DemProj to MS-Excel® and complete the calculation of number of doses of DPT needed. 	<p>Finally, we are going to export the number of births from DemProj to Excel and complete the calculation. Are you ready?</p>

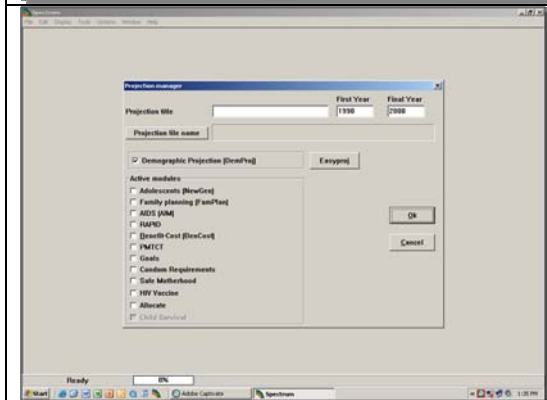
<p>Exercise 1: Ministry of Health, Benin</p> <hr/> <p>Steps in the exercise:</p> <ol style="list-style-type: none"> 1. Create a population projection from 2005 to 2020. <ul style="list-style-type: none"> ▪ Use UN data. (EasyProj) ▪ Assume a medium variant for TFR 	<p>Exercise 1: Ministry of Health, Benin</p> <p>Steps in the exercise:</p> <ul style="list-style-type: none"> ▪ Create a population projection from 2005 to 2020. <ul style="list-style-type: none"> ▪ Use UN data. (EasyProj) ▪ Assume a medium variant for TFR 	<p>For this exercise, we're going to use data from the UN population database by using EasyProj. We are also going to assume a medium variant for total fertility. Let's start by opening up Spectrum.</p>
	<p>[Image of computer screen]</p>	<p>First we are going to open Spectrum,</p>
	<p>[Image of computer screen]</p>	<p>and this is the screen you will see. Now, going up to "File,"</p>

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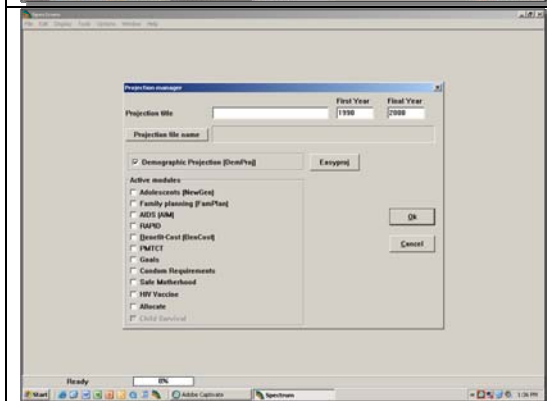
[Image of computer screen]

we are going to "Create a new projection,"



[Image of computer screen]

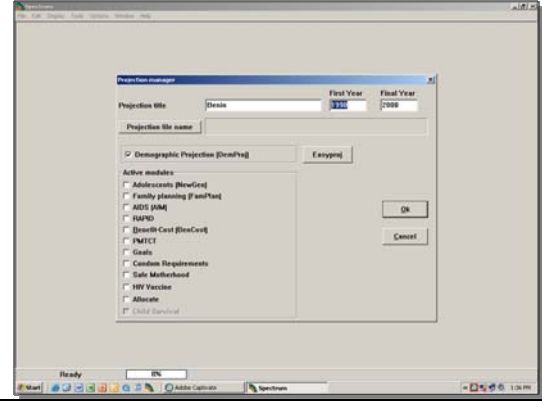
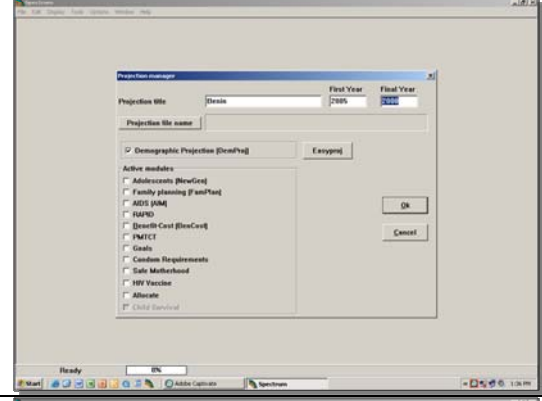
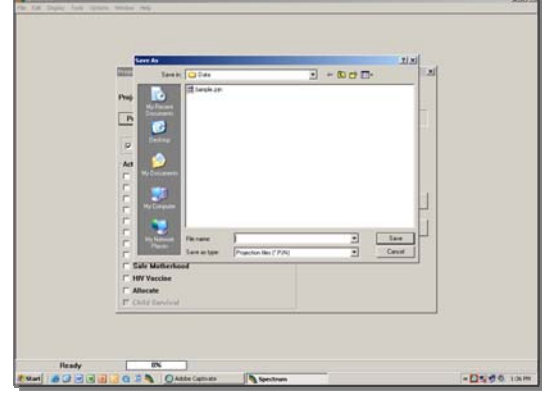
and we are going to give it a name.



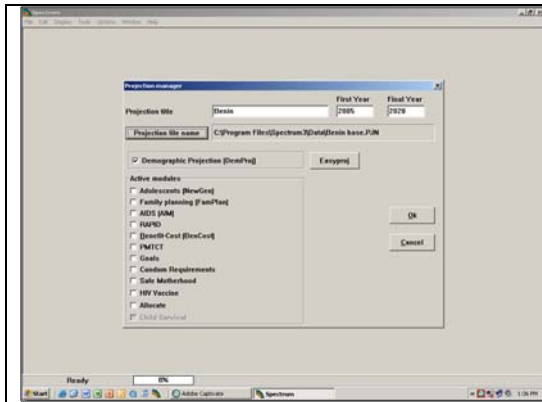
[Image of computer screen]

Let's just call it for the moment "Benin." Now, we are going to take the first year and

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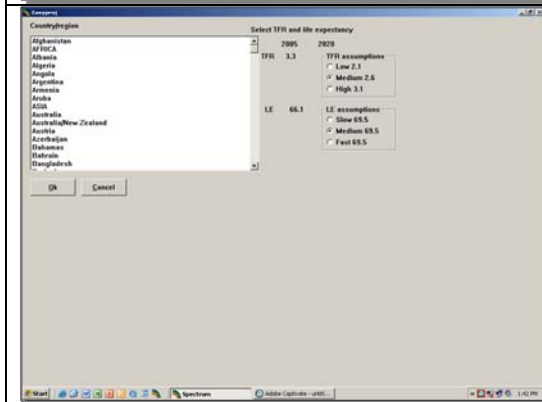
	<p>[Image of computer screen]</p>	<p>make it “2005,”</p>
	<p>[Image of computer screen]</p>	<p>and the last year we are going to set at “2010.” Then, over here,</p>
	<p>[Image of computer screen]</p>	<p>we are going to give it another name, and this particular application we are going to call “Benin base.”</p>

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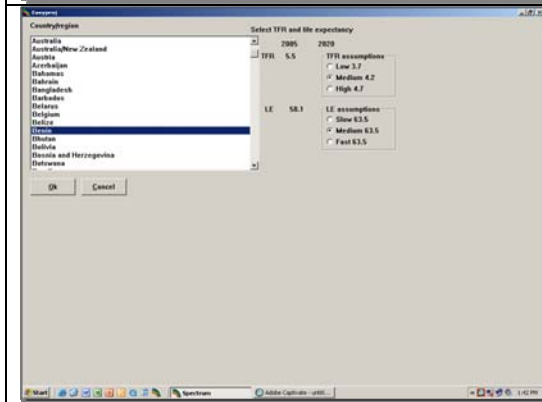
[Image of computer screen]

Finally, we are going to set the input parameters to Easyproj, so click on "Easyproj."



[Image of computer screen]

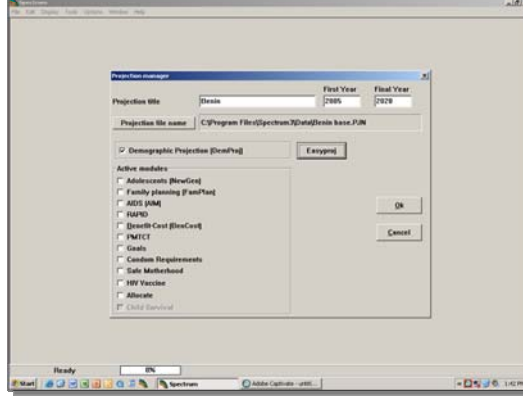
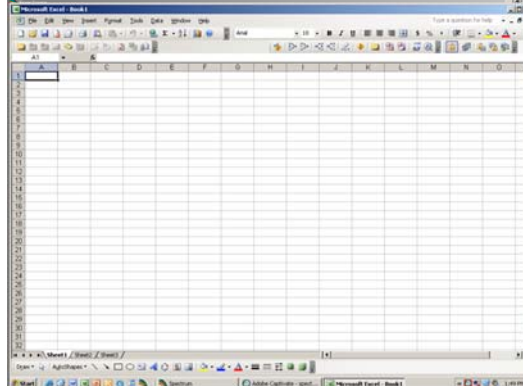
Okay, now we can see that Easyproj is opened, and what we do is



[Image of computer screen]

we scroll down and we find Benin— there we have it. Be sure to check your total fertility rate (TFR) assumptions— you see they are here— it is the medium variant—and the life expectancy assumptions are also set to medium so we know that we are okay there, and let's just hit "Okay."

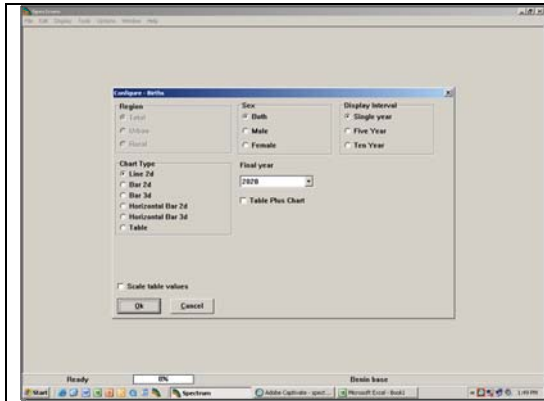
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	<p>[Image of computer screen]</p>	<p>Now we have done everything; we have our projection title, we have our first year, we have our final year, we have given it the name of the name base, we have loaded Easyproj, and now just hit “Okay.”</p>
<p>Exercise 1: Ministry of Health, Benin</p> <hr/> <p>Steps in the exercise:</p> <ol style="list-style-type: none"> 1. Create a population projection from 2005 to 2020. 2. Using the “Display” function in DemProj, find the expected number of births by year. 	<p>Exercise 1: Ministry of Health, Benin</p> <p>Steps in the exercise:</p> <ul style="list-style-type: none"> ▪ Using the “Display” function in DemProj, find the expected number of births by year. 	<p>Congratulations! We’ve just finished the first step. Step 2 is to find the number of expected births by year. But before we go back to Spectrum, let’s open a blank worksheet in Excel.</p>
		<p>So now we have an Excel workbook; we are not going to use it right away, but it is there as soon as we need it.</p>

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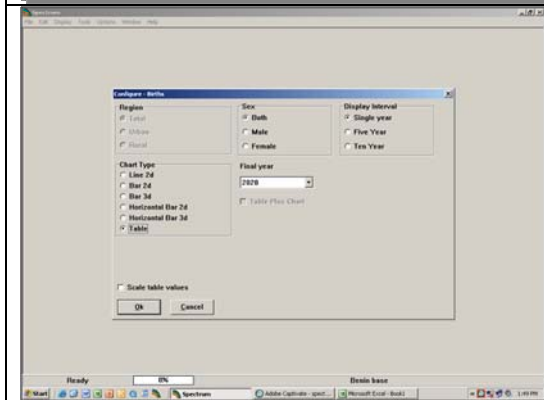
	<p>[Image of computer screen]</p>	<p>Going back to Spectrum, we now want to look for our outputs. We go up to “Display,”</p>
	<p>[Image of computer screen]</p>	<p>“Demography (DemProj),”</p>
	<p>[Image of computer screen]</p>	<p>and then we are going to be looking for births. So then we want to scroll down to vital events, then births. We click on “Births.”</p>

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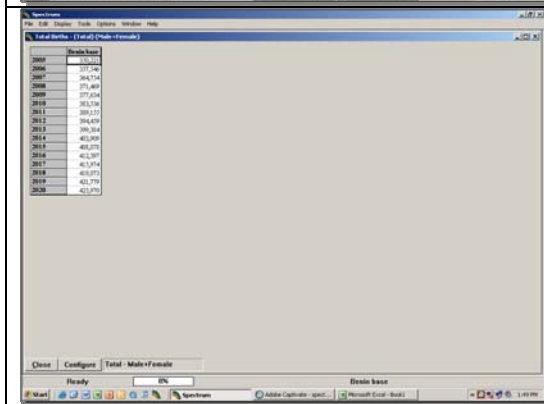
[Image of computer screen]

We now have the opportunity to configure what the output is going to look like. We want the numbers of births rather than a chart, so we are going to go down to "Table,"



[Image of computer screen]

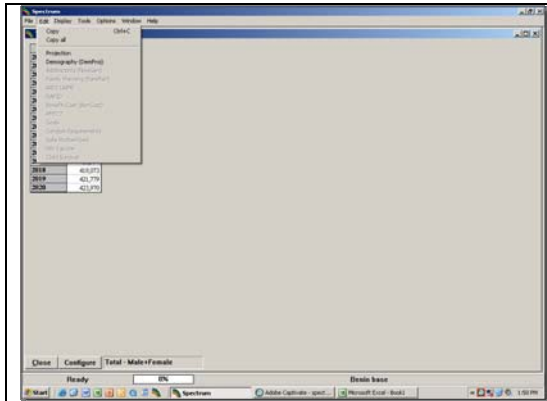
click on that, and we are not going to scale the table values down here, so we'll leave that unclicked. Then hit "Okay."



[Image of computer screen]

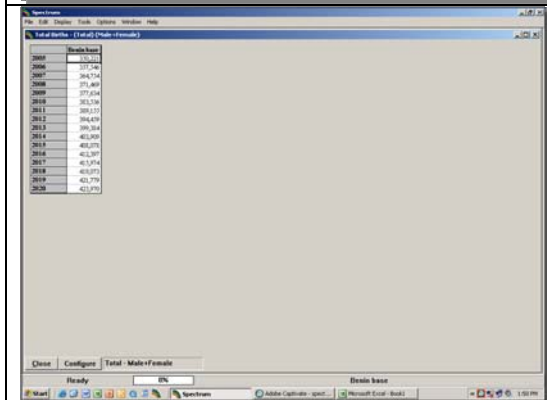
Now we can see the total number of births in Benin, both male and female, starting in the base year of 2005 and going all the way down to 2020. We want to copy this panel to Excel so we can work with it. The best way to do that is to go up to "Edit"

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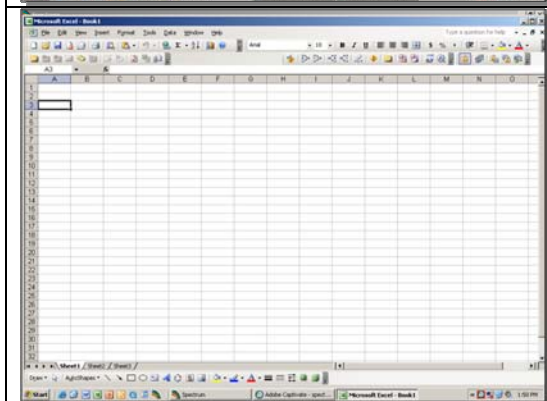
[Image of computer screen]

and "Copy All."



[Image of computer screen]

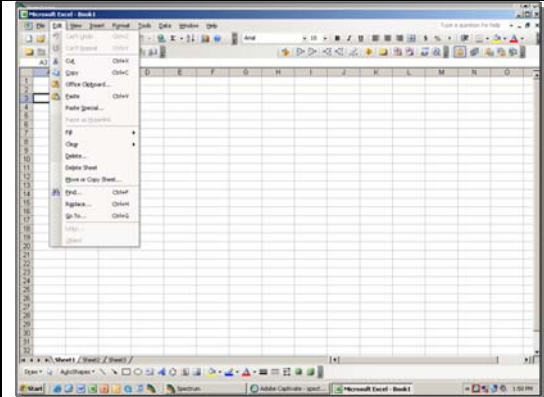
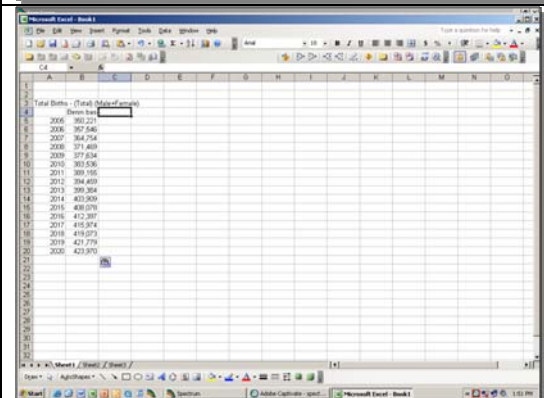
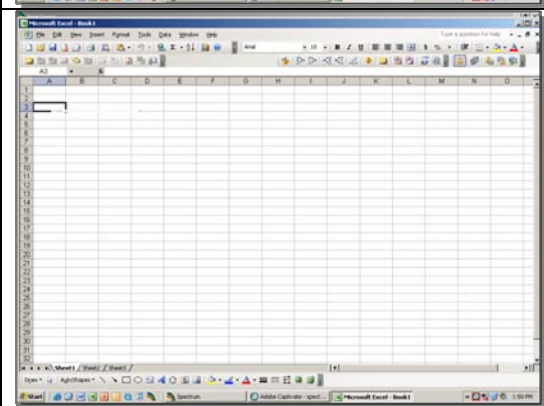
Now this is in the computer memory, and we can go back to the Excel workbook we opened up.

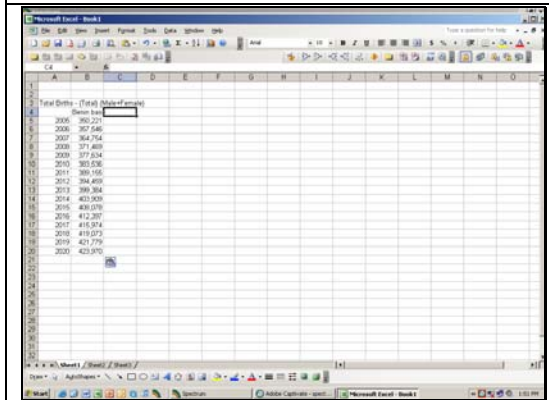
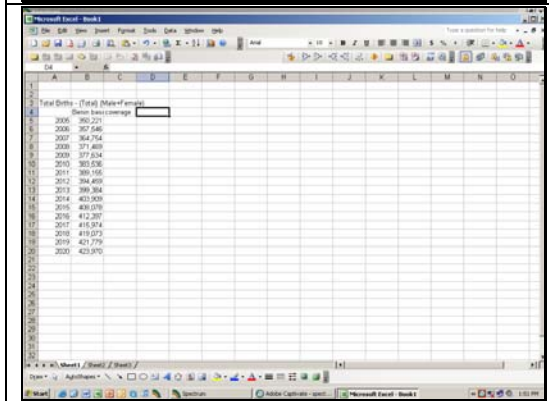


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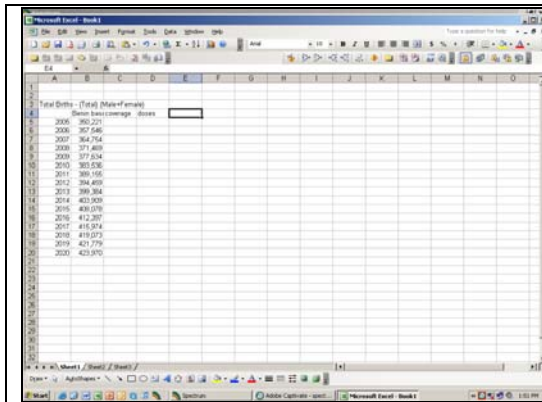
Place your cursor wherever you want to start and then select "Edit,"

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	<p>[Image of computer screen]</p>	<p>select either "Paste"</p>																																																			
 <table border="1" data-bbox="176 613 716 1008"> <thead> <tr> <th>Total Dollars (Thous. Annual Project)</th> <th>Year</th> <th>Dollars</th> </tr> </thead> <tbody> <tr><td>2006</td><td>2006</td><td>362,220</td></tr> <tr><td>2006</td><td>2006</td><td>367,546</td></tr> <tr><td>2007</td><td>2007</td><td>364,756</td></tr> <tr><td>2008</td><td>2008</td><td>371,468</td></tr> <tr><td>2008</td><td>2008</td><td>377,634</td></tr> <tr><td>2009</td><td>2009</td><td>368,536</td></tr> <tr><td>2011</td><td>2011</td><td>369,195</td></tr> <tr><td>2012</td><td>2012</td><td>364,499</td></tr> <tr><td>2013</td><td>2013</td><td>369,364</td></tr> <tr><td>2014</td><td>2014</td><td>403,909</td></tr> <tr><td>2015</td><td>2015</td><td>408,076</td></tr> <tr><td>2016</td><td>2016</td><td>412,387</td></tr> <tr><td>2017</td><td>2017</td><td>416,974</td></tr> <tr><td>2018</td><td>2018</td><td>421,078</td></tr> <tr><td>2019</td><td>2019</td><td>421,779</td></tr> <tr><td>2020</td><td>2020</td><td>423,976</td></tr> </tbody> </table>	Total Dollars (Thous. Annual Project)	Year	Dollars	2006	2006	362,220	2006	2006	367,546	2007	2007	364,756	2008	2008	371,468	2008	2008	377,634	2009	2009	368,536	2011	2011	369,195	2012	2012	364,499	2013	2013	369,364	2014	2014	403,909	2015	2015	408,076	2016	2016	412,387	2017	2017	416,974	2018	2018	421,078	2019	2019	421,779	2020	2020	423,976	<p>[Image of computer screen]</p>	<p>or, if you are comfortable, you can use Ctrl+V.</p>
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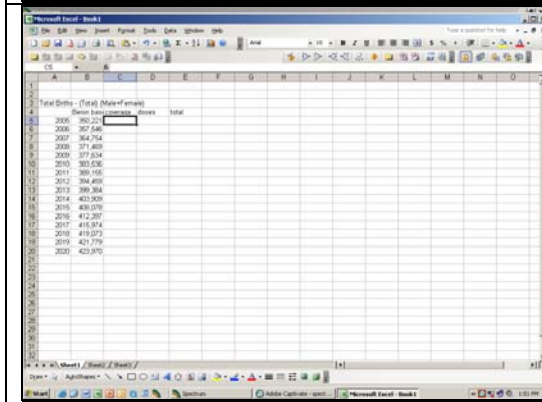
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	<p>[Image of computer screen]</p>	<p>Let's open a new column for coverage.</p>
	<p>[Image of computer screen]</p>	<p>Then, we know we need 3 doses per child, so we will create a column for doses.</p>

Part 3 Handout: Applications of DemProj



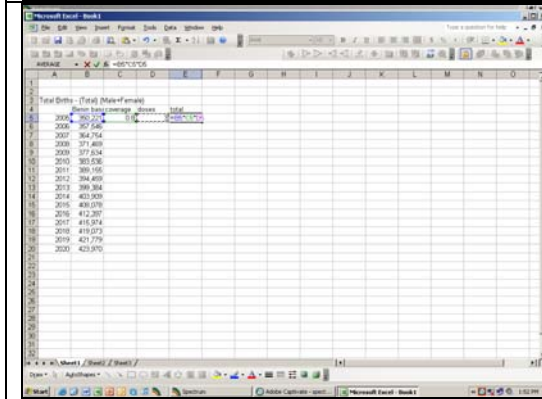
[Image of computer screen]

And then, just open a third column, which is our total. You can name these however you want.



[Image of computer screen]

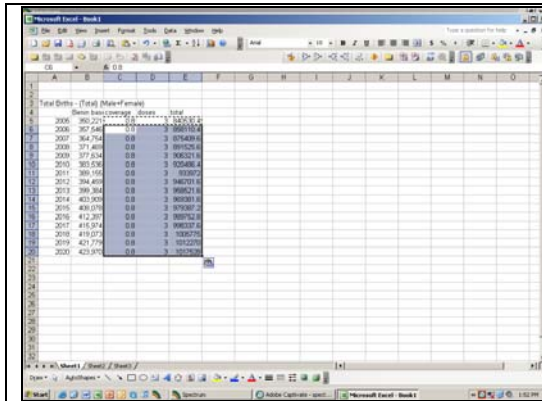
We will start at 2005 so you can see the entire range. We had our coverage at 80%, which is 0.8.



[Image of computer screen]

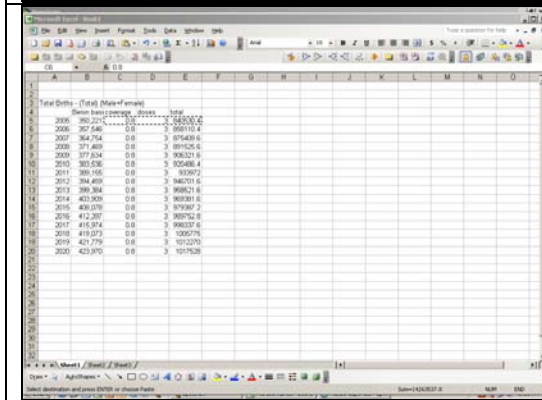
The doses per child is 3, and the total is simply the number of children— so, we can do = (equals), the number of children, * (times) the coverage, * (times) the number of doses. And we can see that in 2005, Benin would have needed more than 800,000 doses.

Part 3 Handout: Applications of DemProj



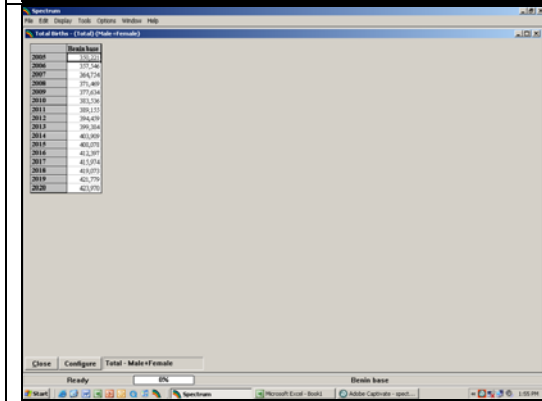
[Image of computer screen]

We can now copy this, however you feel comfortable, and expand it to the entire range, and now you can see how the need for DPT vaccines increases year by year, based on the number of children expected to be born annually in Benin.



[Image of computer screen]

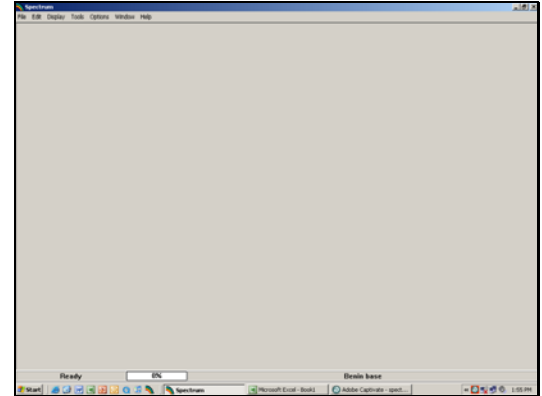
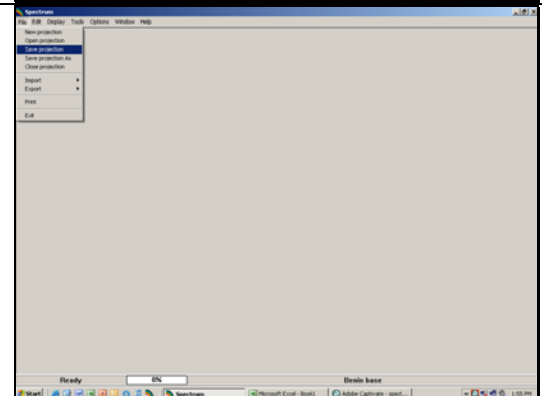
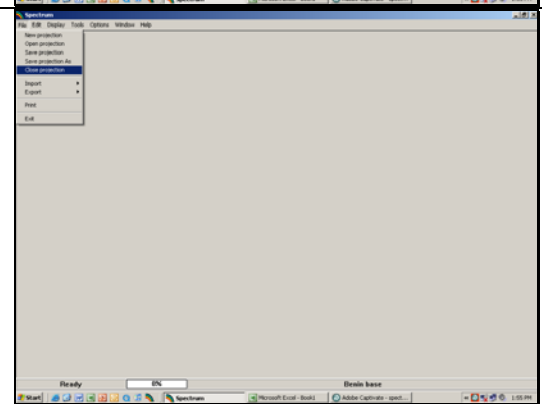
That finishes the exercise. Let's save our projection and review what we have done. Go back to Spectrum.



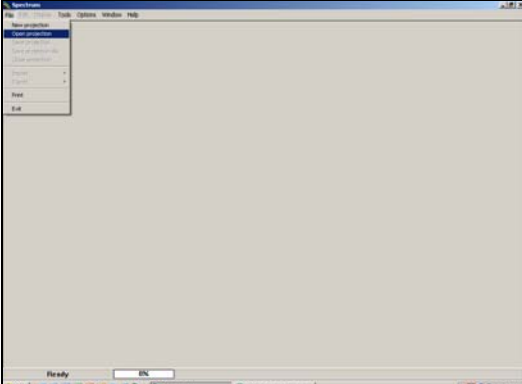
[Image of computer screen]

Close the display.

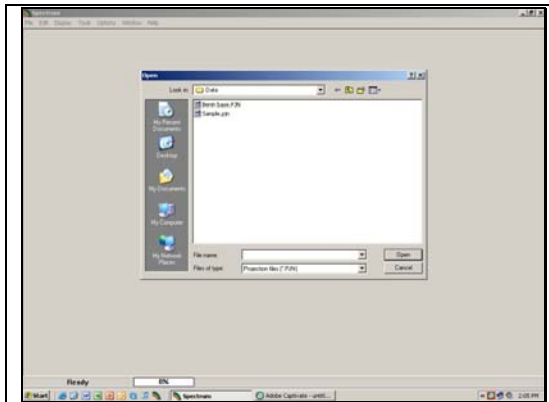
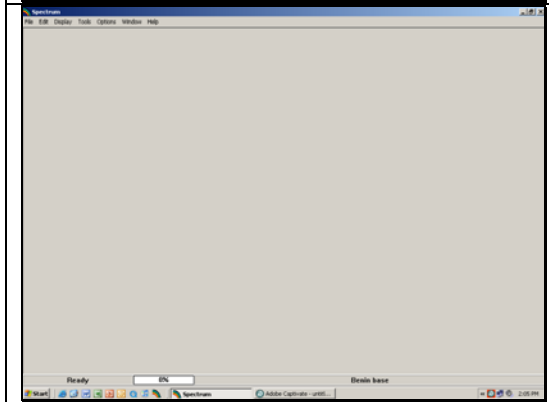
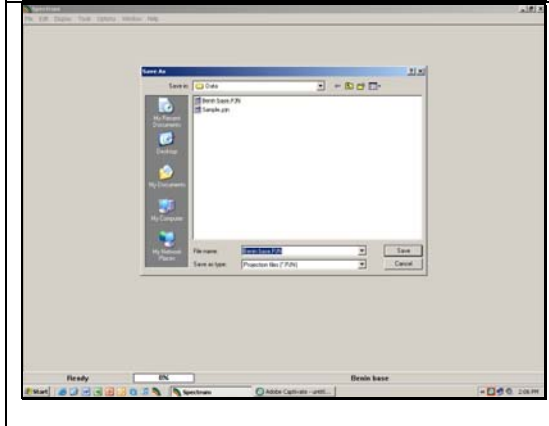
Part 3 Handout: Applications of DemProj

	[Image of computer screen]	It's always a good idea to save,
	[Image of computer screen]	so go back to "File," "Save Projection." It is saved.
	[Image of computer screen]	Now, go back up and close the projection, and now we are finished.

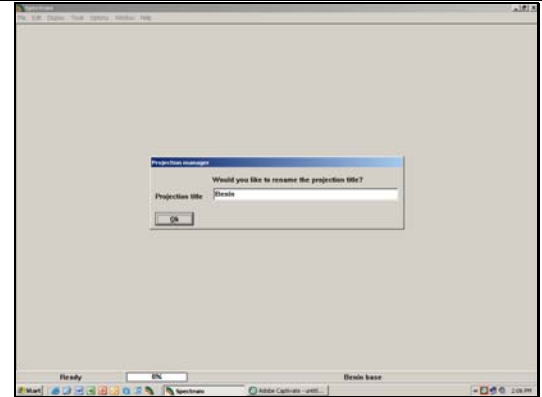
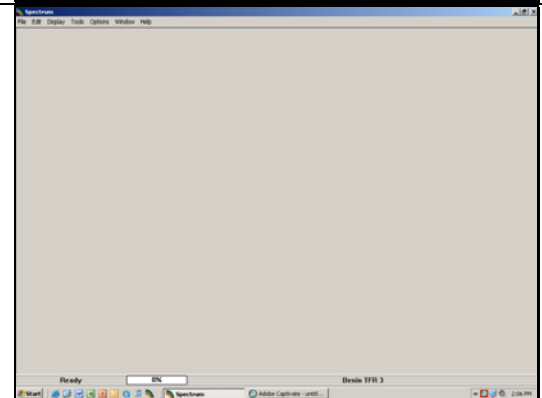
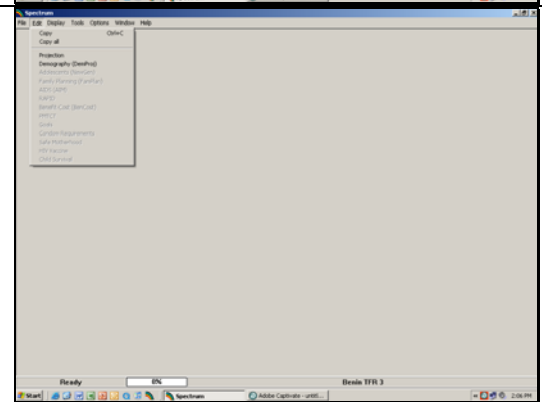
<p>Exercise 1: Ministry of Health, Benin</p> <hr/> <p>Recap:</p> <ol style="list-style-type: none"> 1. Formulate the program question 2. Create a population projection 3. Locate the needed projection outputs 4. Export the outputs from DemProj to MS-Excel® and complete the calculation 	<p>Exercise 1: Ministry of Health, Benin</p> <p>Recap:</p> <ul style="list-style-type: none"> ▪ Formulate the program question ▪ Create a population projection ▪ Locate the needed projection outputs ▪ Export the outputs from DemProj to MS-Excel® and complete the calculation 	<p>We began the exercise by understanding the program question—in this case, how many doses of DPT vaccine the Ministry of Health was going to need in future years— and deciding how to go about answering it. This is the most important step in the application. Be sure you understand how the program works and what the managers need to know before plunging into the projection! Next, we created a population projection and located the needed outputs—in this case, number of births. Finally, we exported the outputs from DemProj to Excel and completed the calculation. Not all applications will need to be finished outside Spectrum. However, it's handy to know how to export Spectrum results into another computer package. You can use the same techniques to export to other applications, such as Word or PowerPoint. This completes the first exercise.</p>
<p>Exercise 2: Ministry of Education, Benin</p> <hr/> <p>In September 2000, 189 Heads of State adopted the Millennium Declaration. The Declaration sets out goals to be reached by 2015. Goal 2 is to achieve universal primary education.</p> <p>Benin has adopted the target that by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.</p>	<p>Exercise 2: Ministry of Education, Benin</p> <p>In September 2000, 189 Heads of State adopted the Millennium Declaration. The Declaration sets out goals to be reached by 2015. Goal 2 is to achieve universal primary education.</p> <p>Benin has adopted the target that by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.</p>	<p>Exercise 2 will continue in Benin—this time with the Ministry of Education. You may have heard of the “Millennium Declaration” that was passed by the United Nations General Assembly in the year 2000. Section 19 of the declaration reads in part, “To ensure that, by the same date—that is by the year 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling and that girls and boys will have equal access to all levels of education.” The declaration goals have been re-stated as the “Millennium Development Goals.” For exercise 2, we are going to look at what the education goal means for Benin.</p>
<p>Exercise 2: Ministry of Education, Benin</p> <hr/> <ul style="list-style-type: none"> ▪ Reports indicate that primary school enrollment in Benin increased from 45% in 1990/1992 to 83% in 2004/05. ▪ High birth rates contribute to the challenge of reaching the target of 100%, as more and more children enter the primary school ages every year. ▪ What would be the impact of decreasing the birth rate on the need for new classrooms? 	<p>Exercise 2: Ministry of Education, Benin</p> <ul style="list-style-type: none"> ▪ Reports indicate that primary school enrollment in Benin increased from 45% in 1990/1992 to 83% in 2004/05. ▪ High birth rates contribute to the challenge of reaching the target of 100%, as more and more children enter the primary school ages every year. ▪ What would be the impact of decreasing the birth rate on the need for new classrooms? 	<p>Benin appears to be making good progress toward the goal of universal primary education. However, because of high fertility rates, each year there will be more children needing schooling than the year before. To accommodate more and more children, Benin will need more classrooms and more teachers. The specific question we will look at is this: Suppose the birth rate in Benin declined faster than what is currently projected—what would this do to the need for new classrooms?</p>

<p>Exercise 2: Ministry of Education, Benin</p> <hr/> <p>1. Using the population projection we created in exercise 1, find out how many 6 year-olds will be ready to start school each year from 2008 until 2020.</p>	<p>Exercise 2: Ministry of Education, Benin</p> <ul style="list-style-type: none"> Using the population projection we created in exercise 1, find out how many 6 year-olds will be ready to start school each year from 2008 until 2020. 	<p>To make the exercise easier, let's look only at children who should start school each year, rather than all the children who should be enrolled, and limit the analysis to 6-year-olds. (This won't be an exact estimate of new enrollees, since some children will not start school until they are older, but it does get us close to the Millennium Development Goal of universal primary school education). Our first task is to find out how many 6-year-olds there will be in Benin, including both boys and girls, in each year from 2008–2020. We will use the population projection we created for the first exercise, which was based on the UN medium variant fertility assumptions.</p>
<p>Exercise 2: Ministry of Education, Benin</p> <hr/> <p>1. Using the population projection we created in exercise 1, find out how many 6 year-olds will be ready to start school each year from 2008 until 2020.</p> <p>2. Create a second population projection with a lower expected fertility rate.</p> <ul style="list-style-type: none"> Reduce TFR to 3.0 in 2020 Start the change in fertility decline in 2008 	<p>Exercise 2: Ministry of Education, Benin</p> <ul style="list-style-type: none"> Create a second population projection with a lower expected fertility rate. <ul style="list-style-type: none"> Reduce TFR to 3.0 in 2020 Start the change in fertility decline in 2008 	<p>Then we will create a second population projection with a lower future fertility rate and compare the results of the two projections. Our second population projection will suppose that the total fertility rate drops to 3 births per woman in 2020 and that the faster decline in fertility begins in the year 2008. Let's go back to Spectrum.</p>
	<p>[Image of computer screen]</p>	<p>Let's open the file we created in the first exercise by going to "File," "Open Projection,"</p>

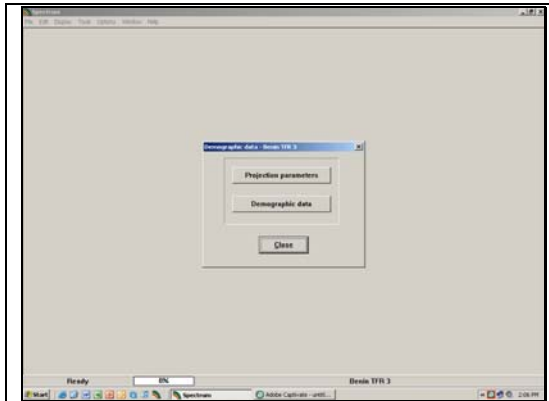
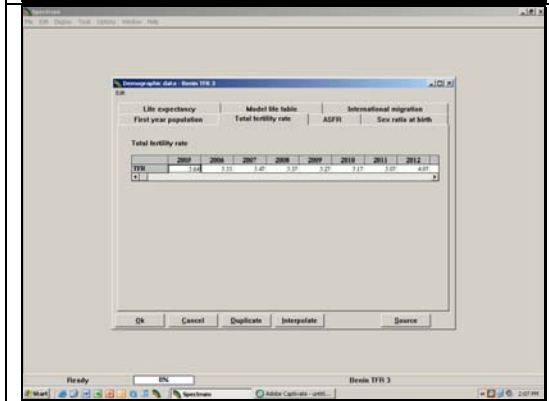
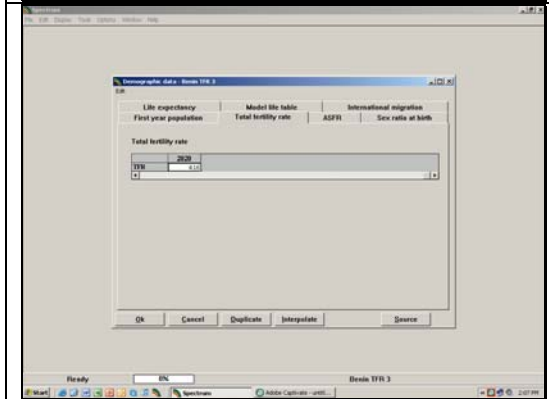
Part 3 Handout: Applications of DemProj

	<p>[Image of computer screen]</p>	<p>and we see “Benin Base” is there. Click on it to open it.</p>
	<p>[Image of computer screen]</p>	<p>One good thing to notice is when a file is open, you see it down here at the bottom, which helps you keep track of the file you’re working on. Now, we want to modify the file to create a new projection with a different fertility assumption, so let’s save this old file in a new name and then edit the new name. That leaves our first file unchanged. So go up to here, “File,”</p>
	<p>[Image of computer screen]</p>	<p>and down here to “Save Projection As,” and we are going to give it a new name. Let’s call it, “Benin TFR 3,” and save.</p>

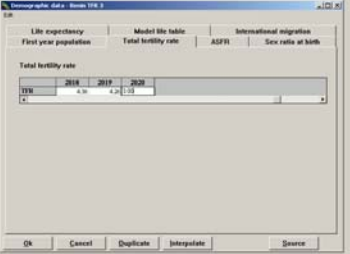
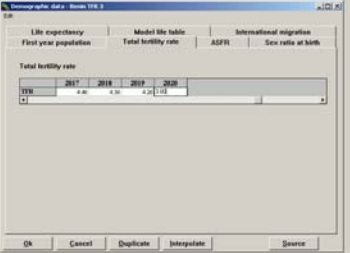

Part 3 Handout: Applications of DemProj

	<p>[Image of computer screen]</p>	<p>And we can call it "Benin TFR3" here as well.</p>
	<p>[Image of computer screen]</p>	<p>Notice down here at the bottom, we are working in "Benin TFR3." We have closed "Benin Base" and are editing "Benin TFR3." At this point, we are ready to edit.</p>
	<p>[Image of computer screen]</p>	<p>We are going to first change the TFR, so we go down to "Edit,"</p>

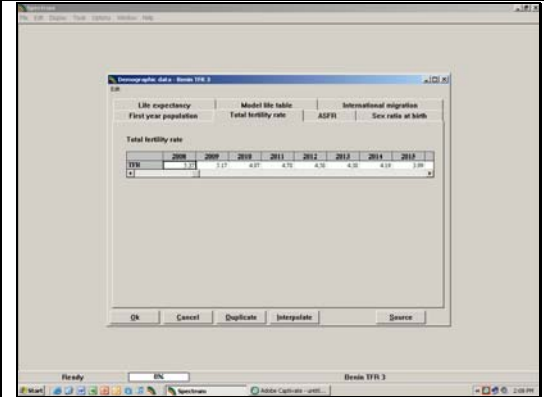
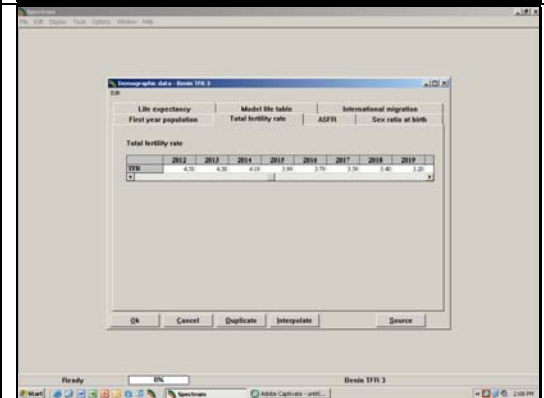
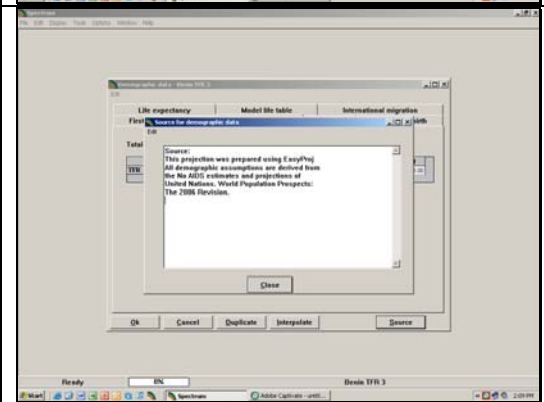
Part 3 Handout: Applications of DemProj

	<p>[Image of computer screen]</p>	<p>“DemProj,” and we are interested in selecting the demographic data—so click here.</p>																						
 <table border="1" data-bbox="283 755 619 803"> <thead> <tr> <th></th> <th>2005</th> <th>2006</th> <th>2007</th> <th>2008</th> <th>2009</th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> <th>2014</th> </tr> </thead> <tbody> <tr> <td>TFR</td> <td>5.64</td> <td>5.25</td> <td>4.87</td> <td>4.50</td> <td>4.13</td> <td>3.77</td> <td>3.42</td> <td>3.07</td> <td>2.72</td> <td>2.37</td> </tr> </tbody> </table>		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	TFR	5.64	5.25	4.87	4.50	4.13	3.77	3.42	3.07	2.72	2.37	<p>[Image of computer screen]</p>	<p>We see the different tabs for the different inputs, and we want to go over to total fertility rate. Take a look at the TFR (remember this comes from the UN projections of the medium variant) and it starts in the year 2005 with the TFR of 5.64.</p>
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014														
TFR	5.64	5.25	4.87	4.50	4.13	3.77	3.42	3.07	2.72	2.37														
 <table border="1" data-bbox="283 1144 619 1193"> <thead> <tr> <th></th> <th>2020</th> </tr> </thead> <tbody> <tr> <td>TFR</td> <td>4.16</td> </tr> </tbody> </table>		2020	TFR	4.16	<p>[Image of computer screen]</p>	<p>When we go to the very end, we can see that in 2020, the medium variant projection called for a TFR of 4.16. We want to make that come down faster, so instead of 4.16, we are going to type in 3.</p>																		
	2020																							
TFR	4.16																							

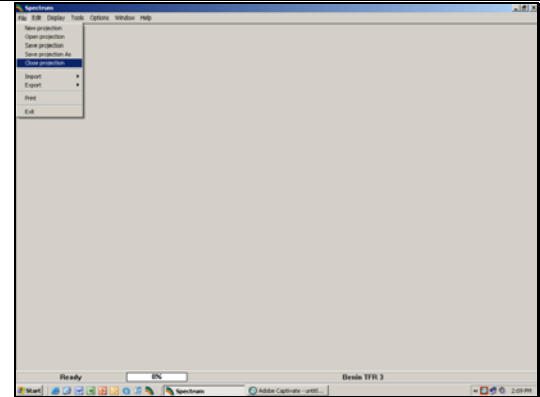
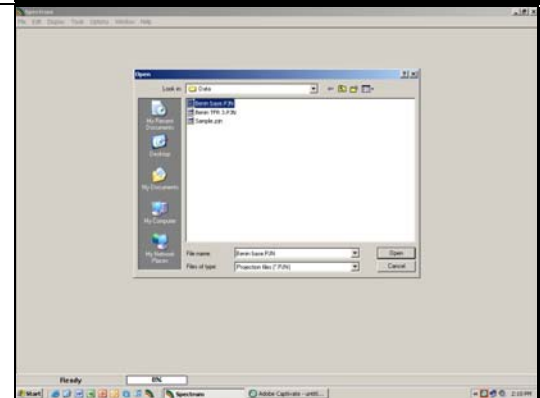
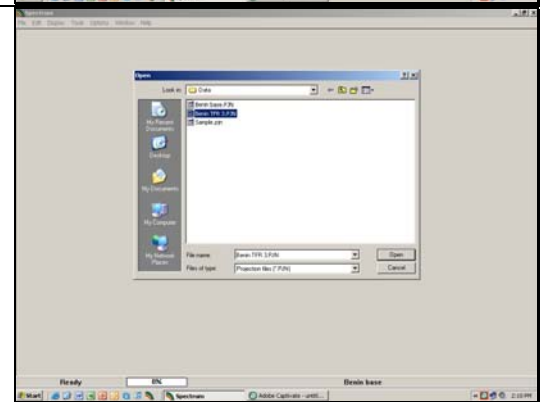
Part 3 Handout: Applications of DemProj

	<p>[Image of computer screen]</p>	<p>Now when we go back, we can see</p>
	<p>[Image of computer screen]</p>	<p>that in 2020, the TFR expectation is 3.0.</p>
	<p>[Image of computer screen]</p>	<p>We want to make this faster fertility decline start in the year 2008.</p>

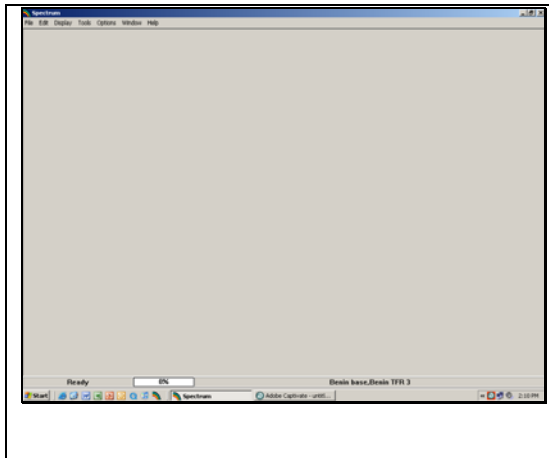
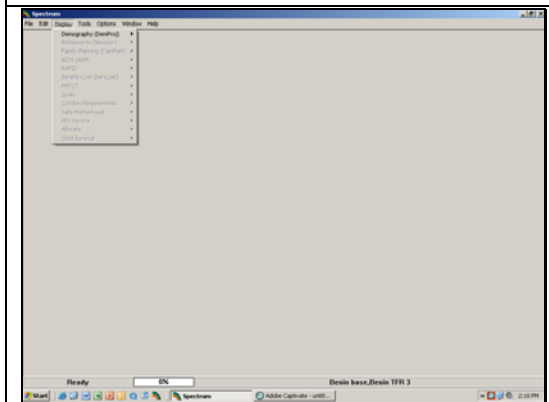
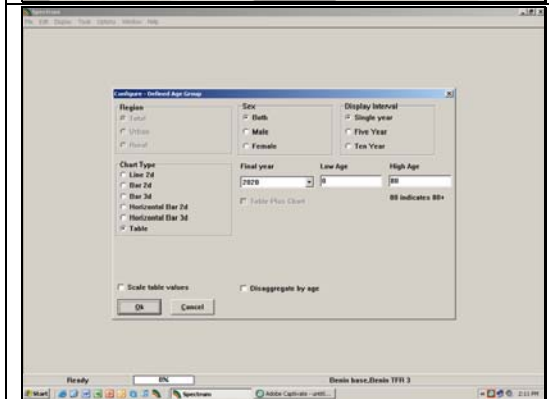
Part 3 Handout: Applications of DemProj

 <p>The screenshot shows the 'Demographic Data - Brazil 1983' window. The 'Total fertility rate' table is visible with the following data:</p> <table border="1"> <thead> <tr> <th></th> <th>2008</th> <th>2009</th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> </tr> </thead> <tbody> <tr> <td>TFR</td> <td>3.23</td> <td>3.27</td> <td>3.27</td> <td>3.27</td> <td>3.27</td> <td>3.27</td> <td>3.27</td> <td>3.27</td> </tr> <tr> <td>CI</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		2008	2009	2010	2011	2012	2013	2014	2015	TFR	3.23	3.27	3.27	3.27	3.27	3.27	3.27	3.27	CI									<p>[Image of computer screen]</p>	<p>Go back to 2008, click on it, and now highlight the range between 2008 and 2020. Once we have this highlighted, we are going to click on “Interpolate,” and as you can see, the rates of fertility decline faster and faster and get us to 3.0 in 2020.</p>
	2008	2009	2010	2011	2012	2013	2014	2015																					
TFR	3.23	3.27	3.27	3.27	3.27	3.27	3.27	3.27																					
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	2012	2013	2014	2015	2016	2017	2018	2019																					
TFR	3.27	3.27	3.27	3.27	3.27	3.27	3.27	3.27																					
CI																													
 <p>The screenshot shows the 'Demographic Data - Brazil 1983' window with a 'Source' dialog box open. The text in the dialog box reads:</p> <p>Source: This projection was prepared using EasyProj All demographic assumptions are derived from the UN DES estimates and projections of United Nations, World Population Prospects: The 2006 Revision.</p>	<p>[Image of computer screen]</p>	<p>we can go here into source—and notice this original note came here from EasyProj—and we can add a new note that just says “TFR 3.0 in 2020, beginning 2008.” That way, if you forget what you have done, you can always go back and see. We can close the source, we close the editor, and we close this final editor here, and now we are finished.</p>																											

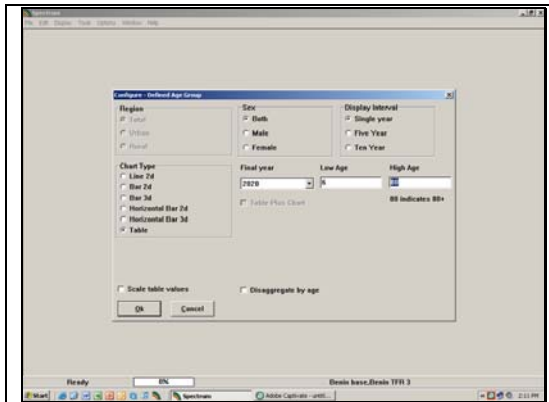
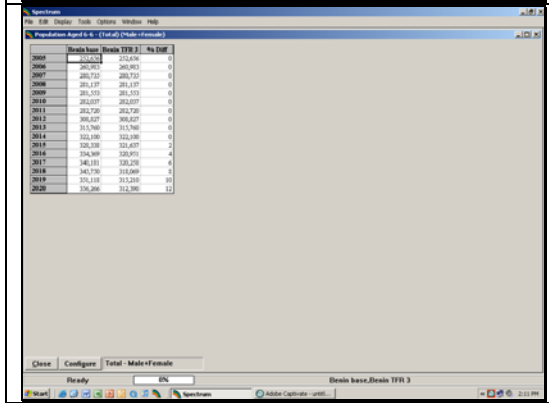
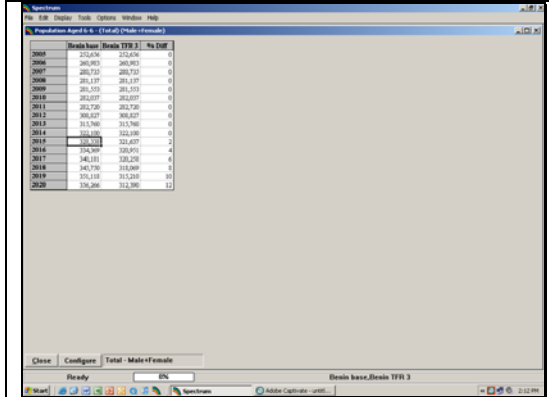
Part 3 Handout: Applications of DemProj

	<p>[Image of computer screen]</p>	<p>Let us pause for the moment and save our projection, and then close it. Now we are ready to compare the two projections.</p>
	<p>[Image of computer screen]</p>	<p>Let's go back and open the first projection, "Benin Base."</p>
	<p>[Image of computer screen]</p>	<p>Open the second projection, which was "Benin TFR 3."</p>

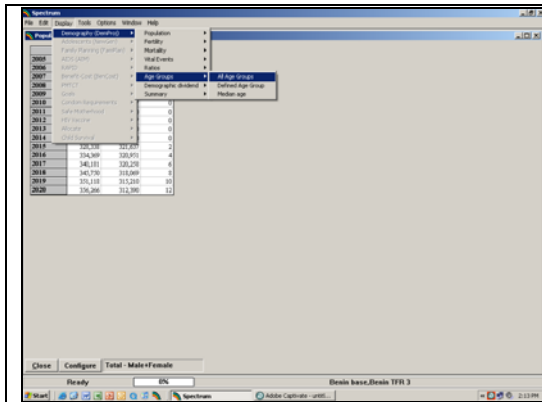
Part 3 Handout: Applications of DemProj

	<p>[Image of computer screen]</p>	<p>And now you can see here, we have both the “Base projection” and the “Benin TFR3” projection open. That means any time we want to display any output, it is going to give us the display for that variable in both projections simultaneously.</p>
	<p>[Image of computer screen]</p>	<p>So now let’s go to “Display,” “Demography,” and we are going to look for a special age group. We want 6-year-olds—and 6-year-olds, as we said, are not a standard 5-year age group, so we are going to have to define an age group</p>
	<p>[Image of computer screen]</p>	<p>down here at “Defined Age Group,” and it is going to ask us to define the group. We want both boys and girls, so we leave this as “Both”; we want single year, so we leave this at “Single Year.”</p>

Part 3 Handout: Applications of DemProj

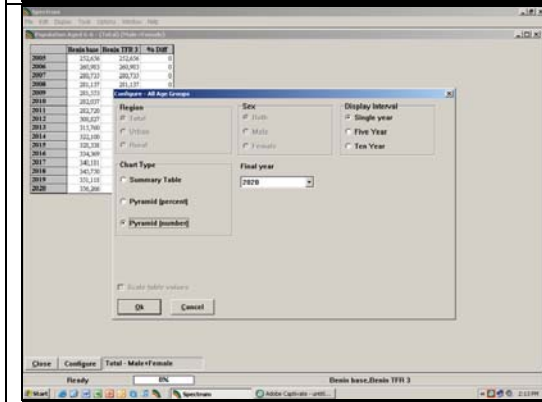
	<p>[Image of computer screen]</p>	<p>The low age is 6 and the high age is 6,</p>																																																												
 <table border="1"> <thead> <tr> <th>Year</th> <th>Benin base</th> <th>Benin TFR 3</th> <th>% TFR</th> </tr> </thead> <tbody> <tr><td>2007</td><td>281,517</td><td>281,517</td><td>0</td></tr> <tr><td>2008</td><td>281,517</td><td>281,517</td><td>0</td></tr> <tr><td>2009</td><td>281,517</td><td>281,517</td><td>0</td></tr> <tr><td>2010</td><td>281,517</td><td>281,517</td><td>0</td></tr> <tr><td>2011</td><td>281,517</td><td>281,517</td><td>0</td></tr> <tr><td>2012</td><td>281,517</td><td>281,517</td><td>0</td></tr> <tr><td>2013</td><td>315,960</td><td>315,960</td><td>0</td></tr> <tr><td>2014</td><td>312,000</td><td>312,000</td><td>0</td></tr> <tr><td>2015</td><td>312,000</td><td>312,000</td><td>0</td></tr> <tr><td>2016</td><td>312,000</td><td>312,000</td><td>0</td></tr> <tr><td>2017</td><td>341,111</td><td>339,258</td><td>4</td></tr> <tr><td>2018</td><td>341,111</td><td>339,258</td><td>4</td></tr> <tr><td>2019</td><td>312,118</td><td>312,118</td><td>0</td></tr> <tr><td>2020</td><td>312,900</td><td>312,900</td><td>11</td></tr> </tbody> </table>	Year	Benin base	Benin TFR 3	% TFR	2007	281,517	281,517	0	2008	281,517	281,517	0	2009	281,517	281,517	0	2010	281,517	281,517	0	2011	281,517	281,517	0	2012	281,517	281,517	0	2013	315,960	315,960	0	2014	312,000	312,000	0	2015	312,000	312,000	0	2016	312,000	312,000	0	2017	341,111	339,258	4	2018	341,111	339,258	4	2019	312,118	312,118	0	2020	312,900	312,900	11	<p>[Image of computer screen]</p>	<p>and that is all we need to do. And there we see our output of the population age 6-year-olds for each year. The Benin Base is here and the new TFR is here. The last column gives us the percent difference, and we notice there is no difference in the number of 6-year-olds until 2015. Why is that? We start the decline in 2008. Obviously, because we are looking at 6-year-olds, that is going to take 6 years to show up. So, we see that starting</p>
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	<p>[Image of computer screen]</p>	<p>in 2015, we have fewer 6-year-olds in the TFR 3 than we had in the base—and that difference gets bigger over time. A curious thing you are going to notice, if you start looking at these numbers carefully, is that in the year 2020, we have 312,000 6-year-olds, and that is fewer than we had in the previous years. In fact, if we go back, you can see that in 2013, there were 315,000 6-year-olds. What is happening?</p>																																																												

Part 3 Handout: Applications of DemProj



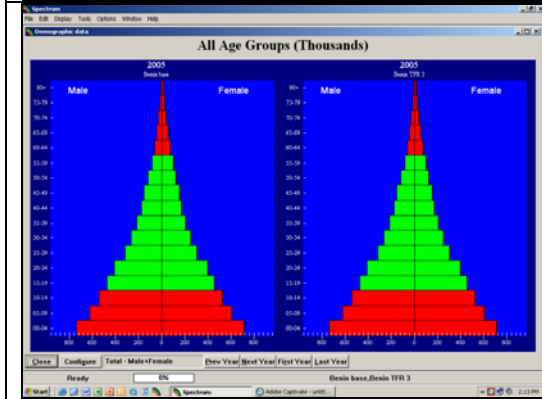
[Image of computer screen]

Why is this going on? Well, let's take another look at population.



[Image of computer screen]

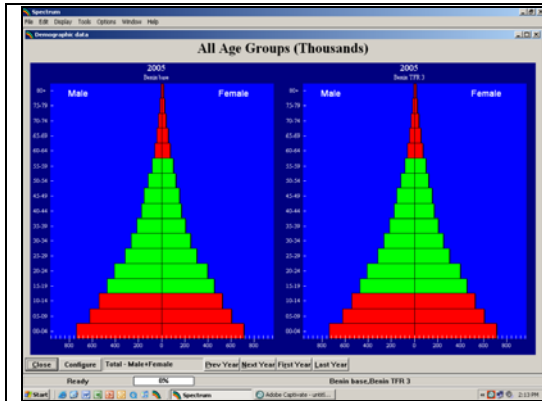
Now, let's look at all of our age groups and display them as a population pyramid.



[Image of computer screen]

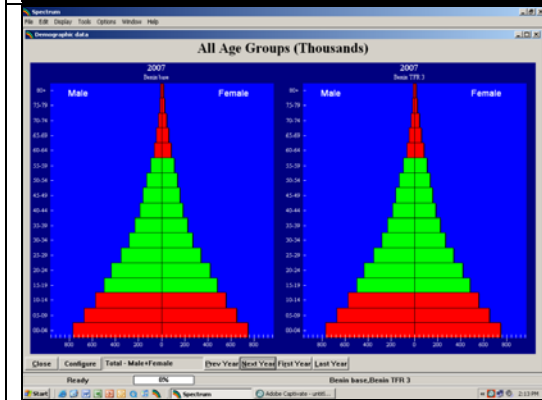
You can see this is our beginning year's projection in 2005. There is no difference between our base and TFR 3.

Part 3 Handout: Applications of DemProj



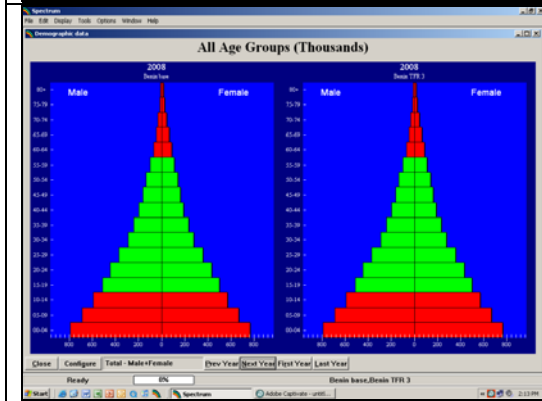
[Image of computer screen]

And we can keep going the next year 2006,



[Image of computer screen]

2007,



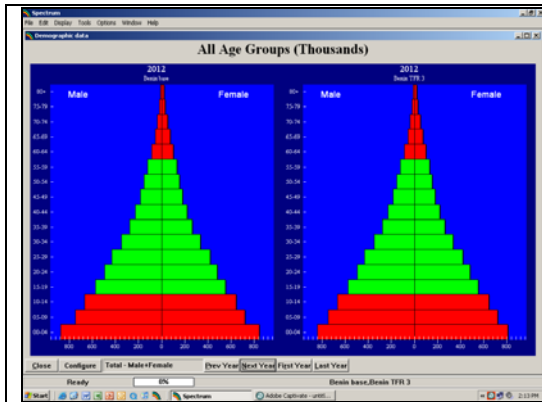
[Image of computer screen]

2008—no difference. That is because we have not started our difference in fertility decline.

Part 3 Handout: Applications of DemProj

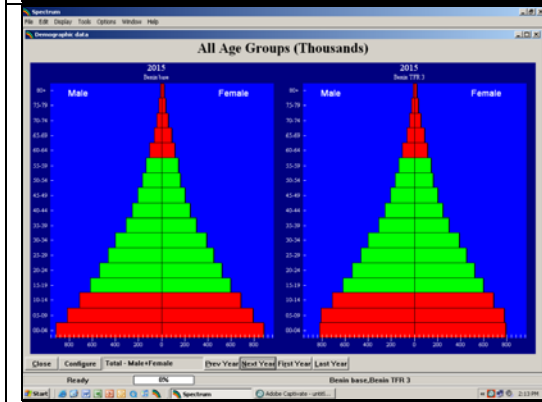
	<p>[Image of computer screen]</p>	<p>Now if you keep watching, as you go to the next year 2009,</p>
	<p>[Image of computer screen]</p>	<p>2010,</p>
	<p>[Image of computer screen]</p>	<p>2011,</p>

Part 3 Handout: Applications of DemProj



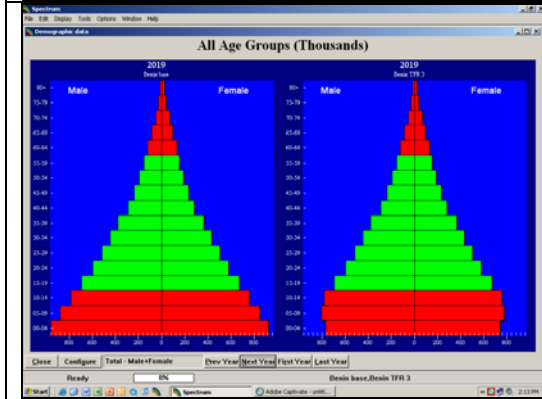
[Image of computer screen]

2012, you see that the base on the new projection is smaller than the base on the old projection.



[Image of computer screen]

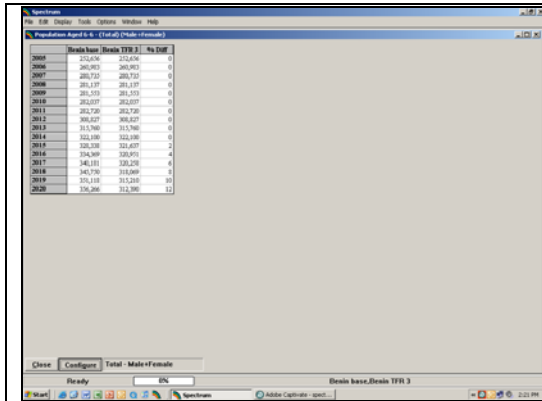
What happens is we are getting a progressively different population pyramid under the projection with the faster fertility decline.



[Image of computer screen]

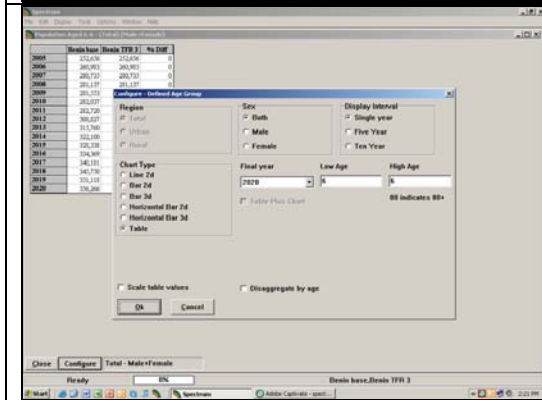
This was described earlier in the first and second modules as what happens when fertility declines. So, you can see that the reason we came with fewer 6-year olds in those earlier tables is due to fewer and fewer births in the total population. Let's go back to the first configuration and see what we have done. You can close this out.

Part 3 Handout: Applications of DemProj



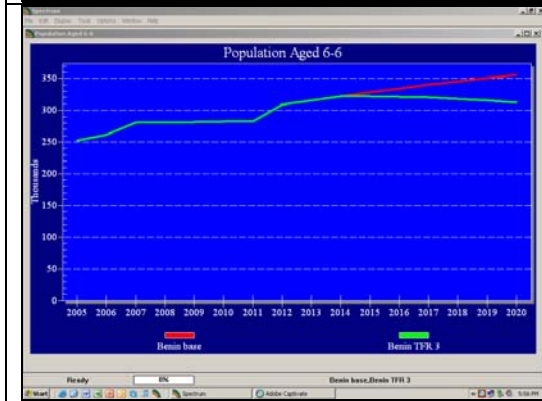
[Image of computer screen]

And you see we have got the population age 6-6, and now reconfigure this display,





[Image of computer screen]

and we can show it as a line graph.



[Image of computer screen]

You see again that here is the base, and it is going up up, because the fertility rate is still above replacement fertility, and in the lower population total fertility assumption, it stabilizes and then goes down. That ends the part we are showing today. Have fun playing with this.

<p>Exercise 2: Ministry of Health, Benin</p> <hr/> <p>Recap:</p> <ol style="list-style-type: none"> 1. Formulate the program question 2. Locate the needed projection outputs 3. Create an alternative projection scenario 4. Compare the two projection scenarios 	<p>Exercise 2: Ministry of Health, Benin</p> <p>Recap:</p> <ul style="list-style-type: none"> ▪ Formulate the program question ▪ Locate the needed projection outputs ▪ Create an alternative projection scenario ▪ Compare the two projection scenarios 	<p>We began the exercise by understanding the program question—in this case, how many children would be ready to start primary school each year. Next, we identify the needed outputs—the number of 6-year-olds in the population. Because this is not a standard 5-year age group, we used the DemProj function to create a special age group. Then we created a second projection with different assumptions about the rate of fertility decline. To complete the exercise, we opened both the original and the revised projection and compared the two scenarios. This completes the second exercise.</p>
<p> Thank you! This completes the DemProj tutorial.</p> 	<p>Thank you! This completes the DemProj tutorial. For more information about other policy models and planning tools please visit the Health Policy Initiative website at www.healthpolicyinitiative.com and click on “Software.”</p>	<p>I hope you have enjoyed the exercises. The best way to learn what DemProj can do is to play with the program. Experiment with the different outputs and display configurations and modify the input assumptions for fertility, mortality, and migration. Just remember to use the “save as” function each time you want to edit the input parameters. That way your original projection will stay unchanged.</p>